North Carolina Department of Transportation
Transportation Program Management Unit - Value Management
Innovative Technologies and Products Awareness Report
May 3, 2018

PRODUCT HIGHLIGHT – Surface Tech Ace Fiber

Figure 1. Ace Fiber in Asphalt

Ace Fiber, designed and manufactured by Surface Tech, is an additive used to increase the strength of asphalt pavements (See Figure 1). It reinforces the asphalt to decrease the pavement's susceptibility to cracking and rutting which are the two of the biggest issues impacting pavement performance and lifespan. Ace Fiber consists of blended aramid (Kevlar) fibers and Sasobit wax which work together to provide 3-dimensional support to increase the asphalt pavement's life expectancy. Aramid fibers have micro-roots (See Figure 2) that anchor into the asphalt to increase structural tensile strength.

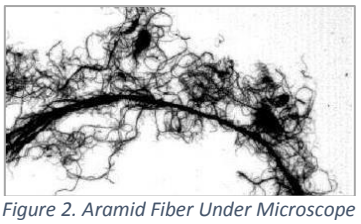

Figure 2. Aramid Fiber Under Microscope

This additive is incorporated into the asphalt mix without changing the mix design; the mixture is added directly to the asphalt mixing drum. The blend is 50% fiber and 50% wax; however, the wax only works as a carrier to the fibers and melts once it is in the mixing drum and leaves the fibers to blend with the asphalt.

In April, Division 8 started a field trial with Ace Fiber on two secondary roads. For more information, please visit https://www.surface-tech.com/asphalt-ace-fiber/.

Figure 3. Pavement Installation

PRODUCT INNOVATION – Stimsonite Lens Cradle Model 201

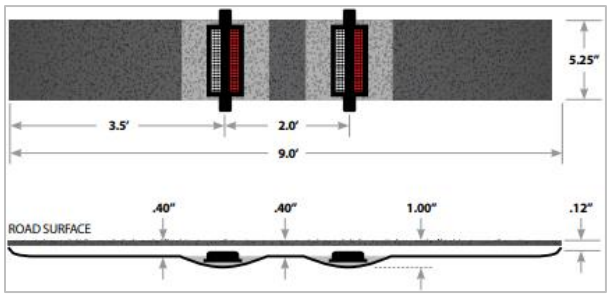

Figure 2. Depiction of Model 201 Installation

The Stimsonite Lens Cradle Model 201, designed and manufactured by Ennis-Flint, is a Raised Pavement Marker (RPM) that rests below the surface of the road to protect it from snow plows while maintaining wet-night reflectivity (See Figure 1). The roadway is recessed and cut to fit the lens cradle. These markers can be installed on new pavement, overlays, or existing pavement. The cradle is secured to the pavement using an epoxy adhesive. (See Figure 2).

Figure 1. Installed in Recession on Roadway

Model 201 is made of a polycarbonate casting which is safer and more cost effective than cast-iron raised pavement markers. The recommended installation is a tandem installation as seen in Figure 1; this tandem installation is less expensive than one typical cast-iron model. Model 201 has a replacement cycle of approximately 10 years. Model 201 RPMs are fitted with Stimsonite Model C40 Replacement Lenses (See Figure 3 and 4). The replaceable lenses have a plastic body with coated polycarbonate lenses, and they have a replacement cycle of 2-4 years depending on the road's average daily traffic. The following lens colors are available: white, yellow, red, blue, green, and fluorescent orange. Markers are available as a one-way marker with one lens and one plug, a two-way marker with two lenses of the same color, or a two-way marker with two different colored lenses.

Model 201 RPMs are currently approved for field trials. They have been installed in Division 5 on Rock Service Station Road and are scheduled to start a field trial in Division 4.

http://www.ennisflintamericas.com/catalog/product/view/id/930/category/90.

Figure 3. Cradle with C40

Figure 4. Cradle without Lens